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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,838	02/11/2002	Takashi Tanaka	219418US3	9017

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EXAMINER	
LAMB, BRENDA A	

ART UNIT	PAPER NUMBER
1734	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
10/068,838	Tanaka et al
Examiner	**Group Art Unit**
LAMB	1734

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

☑ Responsive to communication(s) filed on 6/1/2004.

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☑ Claim(s) 1-8 and 13-15 is/are pending in the application.

Of the above claim(s) _____ is/are withdrawn from consideration.

☑ Claim(s) 14 is/are allowed.

☑ Claim(s) 1, 2, 4-8, 13, 15 is/are rejected.

☑ Claim(s) 3 is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☐ All ☐ Some* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____.

☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____.

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☑ Notice of Reference(s) Cited, PTO-892

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Interview Summary, PTO-413

☐ Notice of Informal Patent Application, PTO-152

☐ Other _____

Office Action Summary

Claims 1-5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The originally filed specification fail to teach or suggest the nozzle is configured to drop the coating liquid in a rod-like state. If applicant disagrees, it is suggested that applicant point out support in the specification, page and line number or in the drawings.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rangarajan et al.

Rangarajan et al teaches the design of an apparatus for forming a coating film comprised of the following elements: holding means for holding the substrate horizontally; a rotation mechanism configured to rotate the holding means such that the substrate held by the holding means is allowed to rotate in a horizontal plane; a nozzle configured to drop a coating liquid on the surface of the substrate; and a mixing means which mixes the coating by rotation or gyration of liquid therein reads on a gyration force generation means for giving a gyrating force to the coating liquid dropped from the nozzle, wherein the nozzle is obviously configured to drop the coating liquid in a rod like state in order to apply the coating at a prescribed region of the substrate (see column 6 line 47 to column 7 line 14).

Claims 1-2, 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki in view of Shields.

Shields teaches the design of an apparatus for forming a coating film comprised of the following elements: a nozzle configured to drop a viscous coating liquid on the surface of the substrate; and a gyration force generation means for giving a gyrating force to the coating liquid dropped from the nozzle, wherein the nozzle is depicted as

dropping coating liquid in a rod like state. Shields fails to teach a holding means for holding the substrate horizontally and a rotation mechanism configured to rotate the holding means such that the substrate held by the holding means is allowed to rotate in a horizontal plane. However, Suzuki teaches the design of an apparatus comprised a nozzle configured to drop a viscous coating liquid on the surface of the substrate; a holding means for holding the substrate horizontally; and a rotation mechanism configured to rotate the holding means such that the substrate held by the holding means is allowed to rotate in a horizontal plane. Suzuki fails to teach a gyration force generation means for giving a gyrating force to the coating liquid dropped from the nozzle. However, it would have been obvious to modify Suzuki apparatus by substituting its viscous coating applicator with the Shields applicator for the taught advantage of greater control of the thickness of applied coating. Thus claim 1 is obvious over the above, cited references. With respect to claim 2, the same rejection applied to claim 1 is applied here. Shields shows spiral groove 14 formed on the inner wall of the spray head or nozzle. With respect to claims 4 and 15, the inlet of Shields nozzle is configured to accept a coating liquid and dilution liquid when separately supplied from separate sources.

Claims 6-8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rangarajan et al in view of Luegering.

Rangarajan et al is applied for the reasons noted above. Rangarajan fails the mixing means within his nozzle is a center rod with a plurality of fins disposed on the center rod. However, Luegering teaches the design of an apparatus for forming a

coating film comprised of a nozzle configured to drop a multi-component coating liquid on the surface of the substrate. Luegering nozzle is comprised of a center rod with a plurality of fins disposed on the center rod and the fins impart a helical swirling or spiral motion to the coating thereby reading on a gyration force generation means. Therefore, it would have been obvious to modify Rangarajan et al apparatus by substituting its mixing and dispensing viscous coating nozzle applicator with the Luegering mixing and dispensing viscous coating nozzle applicator mixing portion for the taught advantage of uniform distribution of the coating on the substrate. Thus claim 6 is obvious over the above cited references. With respect to claim 7, Luegering shows components of coating are separately supplied to the nozzle and teaches that a gyrating force is given to the coating by the fins. With respect to claim 13, the same rejection applied to claim 6 is applied here. The Luegering fins impart a helical swirling or spiral motion to the coating thereby reading on a gyration force generation means. With respect to claim 8, Luegering shows the hole tapers toward the exit.

Claims 1, 2, 4-5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over La Bianca in view of Willis.

La Bianca teach the design of an apparatus for forming a coating film on a substrate by applying a coating liquid to the substrate which is comprised of the following elements: a holding means 4 for holding the substrate horizontally; a rotation mechanism 8 for rotating the holding means such that the substrate rotates in a horizontal plane; and an atomizing spray nozzle for dropping the coating liquid onto the substrate as shown in Figure 1. La Bianca fails to the apparatus includes a gyrating

force generation means. However, Willis teaches a spray nozzle includes a gyrating force gyrating means (element 6) for giving a gyrating force to the coating material applied to the substrate. Therefore, absent the new matter, it would have been obvious to modify the La Bianca apparatus by substituting its atomizing spray head/nozzle for the Willis spray head/nozzle with gyrating force generation means (element 6) for the taught advantage of the Wills spray head which does not require a power source to atomize the coating material. With respect to claim 2, absent the new matter, the same rejection applied to claim 1 is applied here. Willis shows a plurality of vanes fins 6 are arranged on inner wall of the nozzle which form a groove between the adjacent fins so as to flow the coating in a spiral manner. With respect to claim 4, the inlet of Willis is configured to accept a coating liquid and dilution liquid when separately supplied to the nozzle from separate sources. Willis nozzle is capable of mixing during passing through spiral groove thereby providing a gyrating force. With respect to claim 15, it would have been obvious to modify the La Bianca apparatus by substituting its atomizing spray head/nozzle for the Willis spray head/nozzle with gyrating force generation means (element 6) for the taught advantage of the Wills spray head which does not require a power source to atomize the coating material. Willis shows a plurality of vanes fins 6 are arranged on inner wall of the nozzle which form a groove between the adjacent fins so as to flow the coating in a spiral manner. The inlet of Willis is configured to accept a coating liquid and dilution liquid when separately supplied to the nozzle from separate sources. Willis nozzle is capable of mixing during passing through spiral groove thereby providing a gyrating force.

Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 14 is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brenda Lamb whose telephone number is (571) 272-1231. The examiner can normally be reached on Monday thru Tuesday and Thursday thru Fridays with alternate Wednesdays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BRENDA A. LAMB
PRIMARY EXAMINER

Lamb/LR